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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,653	10/15/2003	Chuan-Pei Yu	AUOP0022USA	2652

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EXAMINER	
HAN, JASON	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/605,653	YU ET AL.	
	Examiner	Art Unit	
	Jason M. Han	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,9 and 11-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,9 and 11-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Pages 2-3, filed January 12, 2006, with respect to the rejection(s) of Claim(s) 1, 6, 9, 11-17 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lang (U.S. Patent 4714983) and Konno (JP 06-94920 A).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 6, and 11-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Adachi et al. (U.S. Patent 6561663).

3. With regards to Claim 1, Adachi discloses a backlight module including:

- A plurality of point light source generators being light emitting diodes (LEDs) [Figure 1: (100a-d); Column 4, Lines 30-35];
- A diffusing plate [Figure 1: (200)] installed atop the plurality of point light source generators for scattering light generated by the plurality of point light source generators, whereby the diffusing plate further includes a plurality of

scattering particles [Figure 1: (300); Column 8, Lines 34-50] formed inside the diffusing plate to uniform the light generated by the point light source generators;

- A plurality of scattering apertures [Figure 1: adjacent (100a-100d)] installed on the surface of the diffusing plate opposite to the plurality of light source generators, wherein a scattering pattern is disposed over the inner wall of at least one scattering aperture [Figure 1: (600a-d)];
- A diffusing sheet [Figure 1: (700, 710)] installed above the diffusing plate for diffusing the light emitted from the diffusing plate;
- Wherein the number of the scattering apertures correspond to the number of the point light source generators, and the position of each scattering aperture corresponds to the position of each point light source generator [Figure 1; Column 4, Lines 30-35].

4. With regards to Claim 6, Adachi discloses each of the plurality of scattering apertures being circular, rectangular, or trapezoidal in shape [Figure 2: (40); Column 5, Lines 12-19].

5. With regards to Claim 11, Adachi discloses at least one prism sheet [Figure 1: (800)] installed above the diffusing sheet.

6. With regards to Claim 12, Adachi discloses at least one brightness enhancement film [Figure 1: (800); Column 11, Line 2] installed above the diffusing plate for enhancing the brightness of the backlight module.

7. With regards to Claim 13, Adachi discloses a reflecting plate [Figure 1: (400)] installed under the plurality of point light source generators for reflecting the light generated by the plurality of point light source generators to the diffusing plate.

8. Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by Adachi et al. (U.S. Patent 6561663).

- A plurality of point light source generators being light emitting diodes (LEDs) [Figure 1: (100a-d); Column 4, Lines 30-35];
- A diffusing plate [Figure 1: (200)] installed atop the plurality of point light source generators for scattering light generated by the plurality of point light source generators, whereby the diffusing plate further includes a plurality of scattering particles [Figure 1: (300); Column 8, Lines 34-50] formed inside the diffusing plate to uniform the light generated by the point light source generators;
- A plurality of scattering apertures [Figure 1: adjacent (100a-100d)] installed on the surface of the diffusing plate opposite to the plurality of light source generators, wherein a scattering pattern is disposed over the inner wall of at least one scattering aperture [Figure 1: (600a-d)]; and
- A diffusing sheet [Figure 1: (700, 710)] installed above the diffusing plate for diffusing the light emitted from the diffusing plate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1, 6, 9, and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lang (U.S. Patent 4714983) in view of Konno (JP 06-94920 A).

10. With regards to Claim 1, Lang discloses a backlight module including:

- A plurality of point light source generators being light emitting diodes (LEDs) [Figure 2: (44); Column 4, Lines 10-17];
- A diffusing plate [Figure 2: (10)] installed atop the plurality of point light source generators for scattering light generated by the plurality of point light source generators;
- A plurality of scattering apertures [Figure 2: (40, 42)] installed on the surface of the diffusing plate opposite to the plurality of light source generators, wherein a scattering pattern is disposed over the inner wall of at least one scattering aperture [Column 4, Lines 1-4];
- Wherein the number of the scattering apertures correspond to the number of the point light source generators, and the position of each scattering aperture corresponds to the position of each point light source generator [Figure 2].

Lang does not specifically teach the diffusing plate further including a plurality of scattering particles formed inside the diffusing plate to uniform the light generated by the point light source generators.

Konno teaches using a light guide [Figure 1: (2)] made of a resin material not uniform in structure such that light passing therethrough is uniformly diffused by particles [Figure 1: (3)] formed within the polymer.

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the backlight module of Lang to incorporate the diffusing plate out of the resin material with scattering particles, as taught by Konno, in order to improve luminance over the conventional light guide plate.

11. With regards to Claim 6, Lang in view of Konno discloses the claimed invention as cited above. In addition, Lang teaches each of the plurality of scattering apertures being circular, rectangular, or trapezoidal in shape [Figure 2: (40); Column 5, Lines 12-19].

12. With regards to Claim 9, Lang in view of Konno discloses the claimed invention as cited above. In addition, Lang teaches the plurality of scattering patterns including a plurality of V-trenches or a plurality of arc trenches [Figure 3: (40)].

13. With regards to Claim 13, Lang in view of Konno discloses the claimed invention as cited above. In addition, Lang teaches a reflecting plate [Figure 2: (52)] installed under the plurality of point light source generators for reflecting the light generated by the plurality of point light source generators to the diffusing plate.

14. With regards to Claim 14, Lang in view of Konno discloses the claimed invention as cited above. In addition, Lang teaches each of the inner walls of the scattering apertures having the scattering pattern [Column 4, Lines 1-4].

15. With regards to Claim 15, Lang in view of Konno discloses the claimed invention as cited above. In addition, Lang teaches the scattering patterns disposed over the inner walls being the same pattern [Column 4, Lines 1-4, (inherently frosted)].

16. Claims 11-12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lang (U.S. Patent 4714983) in view of Konno (JP 06-94920 A) as applied to Claim 1 and 14, respectively above, and further in view of Pelka et al. (U.S. Patent 6134092).

17. With regard to Claims 11-12, Lang in view of Konno discloses the claimed invention as cited above, but does not specifically teach at least one prism sheet installed above the diffusing sheet for uniforming the light diffused by said sheet (re: Claim 11); nor teaches at least one brightness enhancement film installed above the diffusing plate for enhancing brightness of the backlight module (re: Claim 12).

Pelka teaches at least one prism sheet [Figure 12: (108); Column 8, Line 3] installed above a diffusing sheet [Figure 12: (110)] to uniform the light diffused by the diffusing sheet, as well as at least one brightness enhancement film [Figure 12: (108); Column 8, Lines 4-7] installed above the diffusing plate for enhancing the brightness of the backlight module.

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the backlight module of Lang in view of Konno to incorporate the prism sheet and brightness enhancement film of Pelka, so as to improve efficiency via uniform illumination and improved brightness.

18. With regards to Claim 16, Lang in view of Konno discloses the claimed invention as cited above, but does not specifically teach the scattering patterns disposed over the inner walls being different patterns.

Pelka teaches scattering patterns disposed over inner walls implicitly being either the same pattern (e.g., same coating) or different pattern (e.g., various coatings) [Figures 3-4: (65); Column 4, Lines 37-54].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the backlight module of Lang in view of Konno to incorporate the various (e.g., same or different) scattering patterns disposed over the inner walls, as taught by Pelka, in order to achieve a desired optical effect on the illumination, and thus, improving efficiency of the device.

19. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lang (U.S. Patent 4714983) in view of Konno (JP 06-94920 A).

Lang discloses a backlight module including:

- A plurality of point light source generators [Figure 2: (44)];
- A diffusing plate [Figure 2: (10)] installed atop the plurality of point light source generators for scattering light generated by the plurality of point light source generators; and
- A plurality of scattering apertures [Figure 2: (40, 42)] installed on the surface of the diffusing plate opposite to the plurality of light source generators, wherein a scattering pattern is disposed over the inner wall of at least one scattering aperture [Column 4, Lines 1-4].

Lang does not specifically teach the diffusing plate further including a plurality of scattering particles formed inside the diffusing plate to uniform the light generated by the point light source generators.

Konno teaches using a light guide [Figure 1: (2)] made of a resin material not uniform in structure such that light passing therethrough is uniformly diffused by particles [Figure 1: (3)] formed within the polymer.

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the backlight module of Lang to incorporate the diffusing plate out of the resin material with scattering particles, as taught by Konno, in order to improve luminance over the conventional light guide plate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M Han
Examiner
Art Unit 2875

JMH (2/17/2006)

Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800